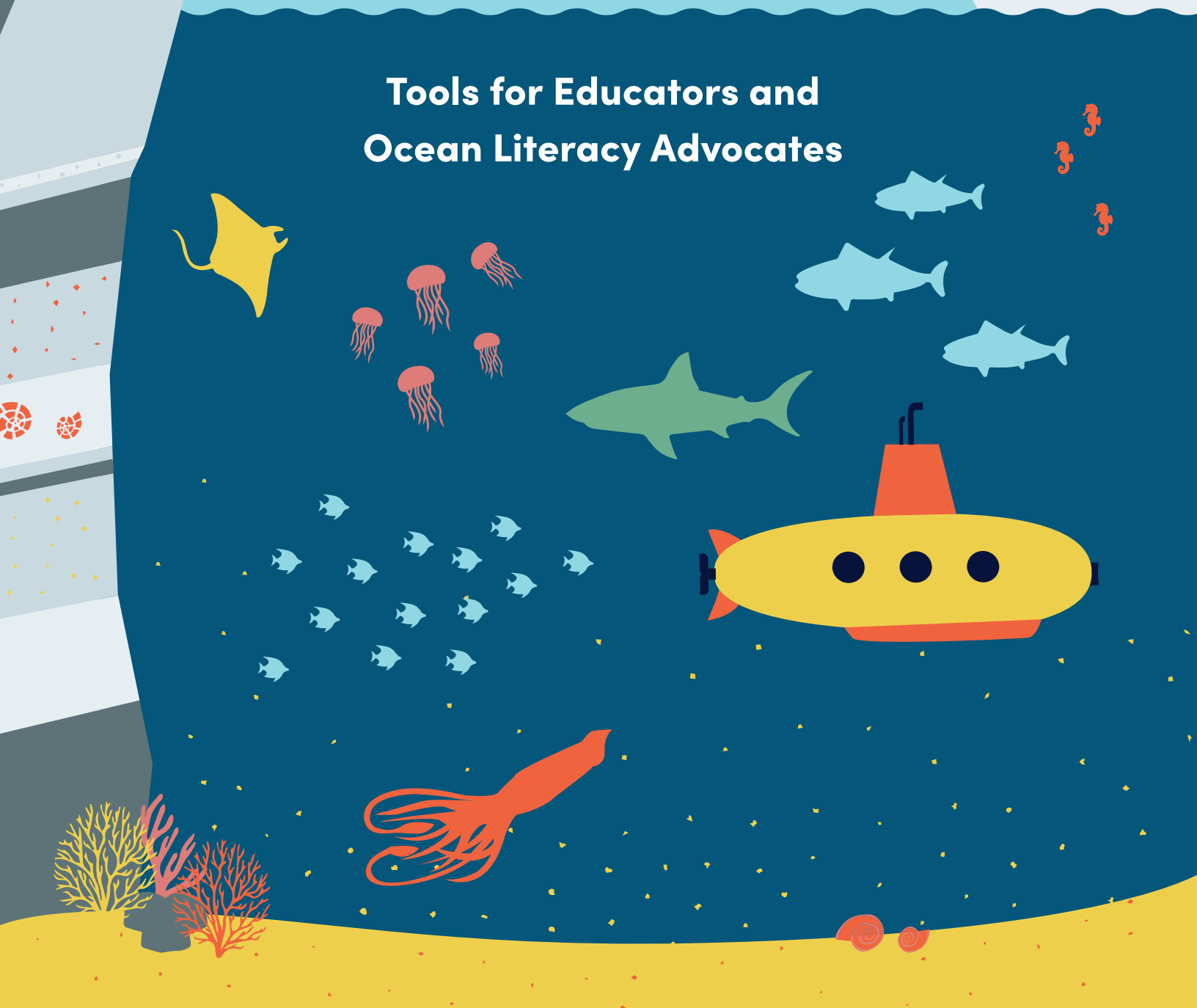




A Handbook for Increasing Ocean Literacy

Tools for Educators and Ocean Literacy Advocates



National Oceanic and Atmospheric Administration
U.S. Department of Commerce



2021 United Nations Decade
of Ocean Science
2030 for Sustainable Development

National
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Association
making known the world of water



Acknowledgments

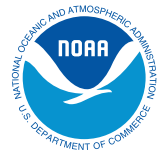
A Handbook for Increasing Ocean Literacy would not have been possible without the long-ago contributions of hundreds of ocean scientists and educators and the support of several organizations that have provided backbone support to the initial development, continual updates, and ongoing dissemination of core documents. The editors thank Craig Strang, Kathy DiRanna, and Jo Topps for allowing us to update and include the article on conceptual flow diagrams in this publication. Additionally, the many individuals who contributed to the development and refinement of 28 conceptual flow diagrams deserve acknowledgement once more for their contributions; these diagrams are still as useful today as they were more than a decade ago and have served ocean educators, curriculum developers, and others well in the intervening years. Finally, we also must acknowledge the work of 17 dedicated ocean literacy experts who gave many hours to the development of the NGSS-ocean literacy alignment. Individual and organizational contributors are included on NMEA's Honor Roll for Ocean Literacy at www.marine-ed.org/ocean-literacy/honor-roll.

The editors also thank Bill Andrade, Lyndsey Manzo, Sarah Pedemonte, Pete Tebeau, Lynn Tran, and Lynn Whitley for assisting the editors with the creation of alternatives to the conceptual flow diagrams that will be accessible to those who rely on screen reader assistance—no small task!

Finally, a special thanks belongs to the following organizations and networks for their past and ongoing support and promotion of the tools contained in this handbook:

[The NSF-funded Centers for Ocean Science Education Excellence](#)
[The Lawrence Hall of Science](#)
[National Marine Educators Association \(NMEA\)](#)
[National Oceanic and Atmospheric Administration \(NOAA\)](#)
[NOAA Sea Grant](#)
[The College of Exploration](#)

This publication was supported by the eeBLUE partnership of the National Oceanic and Atmospheric Administration (NOAA) of the US Department of Commerce and the North American Association of Environmental Education (NAAEE). This publication is an endorsed activity supporting the UN Decade of Ocean Science for Sustainable Development.



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Preferred Citation: Halversen, C.,
Schoedinger, S., & Payne, D.
(2021). *A Handbook for Increasing
Ocean Literacy: Tools for Educators
and Ocean Literacy Advocates*.
National Marine Educators
Association, College Park, MD.

Published by the National Marine
Educators Association (NMEA)
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Fellow Ocean Enthusiasts,

Our one global ocean is the defining feature of our planet. It makes Earth habitable, influences our weather and climate, and supports a great diversity of life and ecosystems. While largely unexplored, the connection between the ocean and humans is undeniable. These ideas are the foundation of what has become an international effort to increase ocean literacy—to help each of us understand the ocean’s influence on us and our influence on the ocean.



Marine educators participating in a pre-conference workshop, Designing Professional Development to Support Ocean Literacy. June 29, 2009 (Photo credit: Craig Strang)

*A Handbook for Increasing Ocean Literacy is a resource for you to help teach, learn, and communicate about the ocean. While originally intended for classroom teachers and informal educators for educational materials, programs, exhibits, and activity development in the United States, **these resources can be used by anyone, anywhere, who seeks to increase ocean literacy.** In 2021, the United Nations launched the Decade of Ocean Science for Sustainable Development 2021–2030. Ocean literacy has been integrated into the goals of and plans for the Decade and this handbook has been recognized as a contribution toward achieving “...the ocean we want” now and in the future.*

In 2004, the National Oceanic and Atmospheric Association (NOAA), the National Science Foundation-funded Centers of Ocean Sciences Education Excellence (COSEE), National Geographic Society, National Marine Educators Association (NMEA), the College of Exploration, and the Lawrence Hall of Science, University of California Berkeley convened a series of meetings to define the most important ideas that the public should understand about the ocean. These meetings resulted in the publication of the seminal document, *Ocean Literacy: The Essential Principles of Ocean Sciences K–12*, originally published in 2005.¹ Upon publication of this guide, there was broad recognition of the potential power of a consensus document describing what every person should know about the ocean to be considered science literate. There was also recognition of the limitations of such a document that describes the ideal end state yet provides no road map for how to get there. The stage was set for the development and publication of the derivative document, *The Ocean Literacy Scope and Sequence for Grades K–12*, which provides just such a road map. These two documents ensured the inclusion of ocean science concepts in *A Framework for K–12 Science Education*, and ultimately the Disciplinary Core Ideas of the Next Generation Science Standards (NGSS). While our community of ocean

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1 This guide has been updated several times, most recently in 2021 and is now titled, *Ocean Literacy: The Essential Principles and Fundamental Concepts for Learners of All Ages* (NOAA 2021)

scientists and educators didn't get all the desired changes to the final Framework and NGSS, there are without a doubt more ocean concepts in the final Framework report and NGSS than in the initial drafts.

The handbook includes the 28 conceptual flow diagrams of *The Ocean Literacy Scope and Sequence for Grades K–12*, an article explaining the theoretical basis for the Scope and Sequence, the *Ocean Literacy Alignment to Next Generation Science Standards*, as well as brief explanations about how to use these tools, their origins, and purposes. It is meant to be used in conjunction with the *Ocean Literacy: The Essential Principles and Fundamental Concepts for Learners of All Ages* (NOAA, 2021). It replaces the seminal publication (now out of print), *Ocean Literacy Campaign Special Report #3* (NMEA, 2010).

This handbook is intended to foster the conversation on Ocean Literacy and bring us closer to our collective goal of global ocean literacy.

Ocean-literately yours,
Diana Payne, Catherine Halversen, and Sarah Schoedinger
Editors

References

National Marine Educators Association. (2010). *NMEA Special Report #3: The Ocean Literacy Campaign*. Retrieved from: www.marine-ed.org/ocean-literacy/special-report

National Oceanic and Atmospheric Administration. (2021). *Ocean Literacy: The Essential Principles and Fundamental Concepts of Ocean Science for Learners of All Ages*. Washington, DC. Retrieved from: www.oceanliteracynmea.org/guide



National Marine Educators Association (NMEA) is a dedicated, influential member-based organization of classroom teachers, informal educators, university professors, scientists, and more from around the world working together to advance the understanding and protection of our freshwater and marine ecosystems. From scientists working in the deep sea to students studying underwater archeology in the Great Lakes, NMEA members are dedicated to making known the world of water, both fresh and salt. For more information, please visit www.marine-ed.org.

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